2020 AUSTRALASIAN TAX TEACHERS ASSOCIATION CONFERENCE:

THE 'EBB AND FLOW' OF FISCAL SUPPORT FOR RESEARCH AND DEVELOPMENT: A NEW ZEALAND REFLECTION

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Abstract

Investment in research and development (R & D) activities is enhanced through appropriate government support. New Zealand's (NZ's) investment in R & D activities as a percentage of GDP has remained low and near the bottom of OECD member countries. Efforts to improve this level in NZ have involved various targeted grants, tax credits (twice), and cashing out of R & D losses (a form of government loan), have ebbed and flowed with the changes in government. In effect R & D support operates like a 'political football'. This paper reviews NZ's approach to supporting R & D investment from the early 2000s to the latest tax credit scheme that took effect in 2019. It reveals' that the level of uncertainty, frequent change and political philosophies has done little to encourage businesses to take risks through increasing their investment in R & D. New Zealand's experience is one for other countries to learn from, so as to avoid the politicisation of fiscal support which occurs at the expense of uncertainty and poor R & D investment performance.

Key words: incentives, New Zealand, policy, R & D (research and development)

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1. Introduction

The New Zealand (NZ) government has, on numerous occasions, sought to stimulate research and development (R & D) investment through statutory intervention. The objective of this paper is to assess the implications of providing tax incentives for R & D expenditure. This will be undertaken through a case study focussing on one jurisdiction, New Zealand (NZ). To set the scene, in NZ with respect to incentivising investment in R &D activities, eligible R&D activities must be:[1]

a) Systematic, investigative and experimental activities (SIE) that are performed for the purposes of acquiring new knowledge or creating new or improved materials, products, devices, processes or services and that:

   - are intended to advance science or technology through the resolution of scientific or technological uncertainty; or

   - involve an appreciable element of novelty.

b) Or other activities that are wholly or mainly for the purpose of, required for, and integral to, the carrying on of the activities in paragraph (a).

According to Statistics NZ, in 2018:[2]

- Total R & D expenditure increased 24 percent from 2016, to $3.9 billion.

- R & D expenditure by businesses reached over $2.1 billion, accounting for 55 percent of total R & D expenditure.

- R & D expenditure by service industries increased $534 million (64 percent) from 2016, and

- R & D expenditure as a proportion of GDP was 1.37 percent.

[1] Section LH 7 of the Income Tax Act 2007 (NZ). This is the definition that applies for eligibility for the new R & D tax credit that came in with effect from the 2019-20 income year.

[2] See further: https://www.stats.govt.nz/information-releases/research-and-development-survey-2018. These figures are before the implementation of the latest tax credit mechanism.

Putting this information into perspective, the OECD average in 2018 for R & D expenditure was 2.37 percent of GDP.[3] This indicates that NZ is only achieving R & D investment at 58 percent of the OECD average. Notwithstanding numerous efforts to increase the level of investment, NZ consistently falls well below the OECD average for R & D investment. As at the time of writing it is too early to assess the impact of the latest tax credit mechanism. This is a state of affairs that cannot be permitted to continue if NZ wishes to improve its productivity, GDP and overall net wealth per capita.

How has the NZ government responded on behalf of the country to this relatively 'poor performance'? In addition to clarifying the definitions of "research" and "development" (including reducing the levels of black hole expenditure[4]), NZ has frequently intervened through targeted legislation and setting up of various Crown entities. These interventions include:

- Creating a tax credit (twice, the first in 2008, the second in 2019);[5]
- Enabling certain businesses with losses to cash out their R & D tax credit, and
- Setting up a grants-based scheme administered by a government agency (currently Callaghan Innovation[6]).

New Zealand's journey is characterised by disparate political views and frequent legislative change. Complex challenges for businesses (especially small business) in understanding and taking advantage of the support provided by government abound. Frequent changes in eligibility criteria and level of funding have exacerbated the situation. Uncertainty, accompanied by change, is the prevailing theme.

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3 See further: https://data.oecd.org/rd/gross-domestic-spending-on-r-d.htm.

4 Black hole expenditure is business expenditure that is expected to result in an economic cost to a taxpayer, but is neither immediately deductible for tax purposes, nor deductible over time. It is not deductible over time because it does not form part of the cost of depreciable property for tax purposes. Thus it refers principally to situations where taxpayers would have received depreciation deductions had a project gone ahead (because the asset was expected to decline in value), but did not because the project was abandoned before it met the definition of depreciable property. See further: Steven Joyce and Judith Collins, *Black hole and feasibility expenditure: a Government discussion document* (May 2017).

5 The first tax credit, created under a Labour-led Government, operated for one year before the incoming National-led Government repealed it. The second scheme was introduced by the new Labour-led Government in 2018 with effect from 1 April 2019.

6 Callaghan Innovation states that it "… provide[s] a single front door to the innovation system for businesses at all stages of their innovation journey – from start-ups to the most experienced R&D performers"; see https://www.callaghaninnovation.govt.nz/about-us/our-role.

It is moot as to whether the most recent changes in 2019 will enable NZ's R & D tax regime to be more internationally competitive. The Taxation (Research and Development Tax Credits) Act 2019 reintroduced a 15 percent tax credit with effect from 1 April 2019. Further modifications to the refundability of R & D tax credits are contained in the Taxation (KiwiSaver, Student Loans, and Remedial Matters) Bill 2019.[7]

The perspective taken in this paper is largely positivist, in that it reviews political interventions to encourage investment in R & D activities. Normative suggestions are also offered in interpreting the effects of these interventions. The paper takes a policy perspective, drawing upon documentary analysis of various scholars and commentators that offer insights into the R & D interventions. This includes prior work by the author along with several of his graduate students. The paper does not attempt to analyse legislation and regulations in detail, and as a consequence, does not utilise blackletter law analysis techniques.

The paper adopts an in-depth exploratory case study approach, whereby it examines over time the various political interventions to encourage investment in R & D activities. It is common to see criticism of case studies as a research method, with some viewing the method to be a non-scientific approach to undertaking research. Notwithstanding this view, case study research is utilised extensively in academic enquiry in traditional social science disciplines as well as practice-oriented fields. When adopting a comparative case study approach, the design and analysis considerations are of prime importance, more so often than the description of events or the scenario under review. As Yin states,[8] the need for a case study arises out of the desire to understand complex social phenomena and allows investigators to retain the holistic and meaningful characteristics of real-life events.

The research question this paper seeks to answer is: *What can we learn from NZ's political intervention experience to encourage investment in R & D activities?* As noted above, this necessitates an in-depth exploratory case study analysis.

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7 At the time of writing this bill remains at the select committee stage as submissions are being analysed.

8 Robert K Yin, *Case Study Research and Applications: Design and Methods*, (Sage Publications, 6th ed. 2017).

Overall, this paper will take an historical review, drawing substantially upon the work of Sawyer[9] and Robinson.[10] It will also evaluate subsequent developments, including the recently enacted R & D tax credit scheme in 2019. The remainder of this paper is organised as follows. Section 2 provides the overall background to the R & D interventions in NZ, along with comments on the early review of their impact and effectiveness. Section 3 draws these reviews together and explores the issue of the R & D inventions being 'hostage' to political ideologies rather than necessarily to work to stimulate NZ's level of R & D investment to meet at least the average for the OECD member countries. Section 4 sets out the concluding observations, limitations of the research and areas for future study.

2. Background and review

Much has been written about R & D fiscal incentives, whether it be through tax credits, grants or other forms of support. This comes from various perspectives, including econometric analysis, and political science. It is not the intention of this paper to undertake a further comprehensive review. Rather, as a single country case study, this part of the paper will briefly review the contributions to the R & D literature from a NZ perspective.

Business expenditure on R & D in NZ is low in comparison to other OECD countries. In an OECD working paper in 2017, the author comments:[11]

> "New Zealand's R&D expenditure, especially by the business sector, is low as a share of GDP ... While it might be reasonable for New Zealand to aspire to a lower level of R&D spending than leading OECD countries due to its industry structure, size and location, *its productivity is hampered by its low rate of R&D expenditure … .*"

One attempt to redress this was the establishment of Callaghan Innovation in 2013 to be a source of R & D grants; this is explored further in the next section of the paper. Deakins et al, in a series of interviews with technology-based small firms (TBSFs) in NZ, concluded:[12]

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9 Adrian Sawyer, "Reflections on providing tax incentives for research and development: New Zealand at the cross roads" (2005) 8(1) *Journal of Australian Taxation*, 111-149.

10 Alex Robinson, *The rise and fall of R&D tax credits in New Zealand: The practitioner's perspective*, BCom Hons Research Project, University of Canterbury (2009).

11 Andrew Barker, "Improving Productivity in New Zealand's Economy" (2017) *OECD Economics Department Working Papers* No 1419, at 15 (emphasis added).

12 David Deakins, David North and Jo Bensemann, "Paradise lost? The case of technology-based small firms in New Zealand in the post-global financial crisis economic environment" (2015) 17(1-2) *Venture Capital* 129, at 147 (emphasis added).

> "Direct government support for TBSFs has been through mechanisms such as technology grants and vouchers targeted at R & D and later stage growth and project development. Whilst such grants have been welcomed as being valuable by our entrepreneur respondents, they have not been without criticism. Some technology entrepreneurs *expressed a preference for R&D tax credits rather than direct grants whilst others perceived grant mechanisms as too bureaucratic, discouraging some firms that would have had eligible projects from applying*. Grants often carry high levels of dead weight (the investment in R&D would have occurred without financial support, perhaps at a later time or at a lower level), arguably resulting in some firms becoming too grant dependent, so the value of relatively high levels of state expenditure could be questioned. However, this would require a full economic evaluation to provide an informed opinion."

Le and Jaffe provide further empirical evidence of the effect of R & D subsidy on innovation in NZ.[13] The authors' study examines the impact of government subsidy through R & D grants on innovation output for firms in New Zealand. The authors had access to a large database that links administrative and tax data with survey data, and found that R & D grants have a stronger effect on more novel innovation than on incremental innovation. They also found that larger, project-based grants are more effective at promoting innovation than smaller, non-project-specific grants. Interestingly, there was little evidence to support the proposition that R & D grants have differential effects between smaller (<50 employees) and larger firms.

Most recently, Nakatani provides a positive early analysis on the potential impact of the recently enacted R & D tax credit. He concludes his analysis as follows:[14]

> "Analysing New Zealand firms' profitability in terms of productivity enhancers, we find the importance of R&D tax incentive and investment. The results indicate that the *R&D tax credit, currently planned by the new government, can improve the performance of New Zealand firms*."

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13 Trinh Le and Adam B Jaffe, "The impact of R & D subsidy on innovation: evidence from New Zealand firms" (2017) 26(5) *Economics of Innovation and New Technology* 429.

14 Ryota Nakatani, "Firm performance and corporate finance in New Zealand" (2019) 26(13) *Applied Economics Letters*, 1118, at 1123 (emphasis added).

Several studies offer longitudinal analyses of the approaches taken to supporting R & D in NZ. The following discussion necessarily provides highlights only and readers are encouraged to read these studies for more detail.

Sawyer[15] provides a background to NZ's approach to supporting R & D to 2005. New Zealand was described in the OECD's 1996 report[16] as the OECD member providing the least R&D tax support; in the mid-2000s NZ remained near the bottom of the list. Under rules introduced in 2001, businesses were allowed a full (100 percent) deduction for most expenditure on R & D, except to the extent that an asset is created. Businesses were also expected to apply tests used for financial accounting reporting purposes to determine eligible expenditure. The Private Sector R & D Liaison Group were working with the NZ Government to provide clear definitions of R & D. One outcome was that definitions were made clearer in the ITA 1994 (as it then was). New Zealand's approach at this time, as Sawyer comments, is to:[17]

> "…prefer R & D subsidies (or grants) over tax credits and incentives to steer research to particular goals and avoid jeopardising the neutrality of the tax system. This most recent approach of *providing grants places the New Zealand Government and officials in the role of 'picking winners', which introduces the risk that factors other than the potential future value and contribution of the R&D, such as political bias*, will be major factors in the decision-making process."

Sawyer's research concludes that:[18]

> "[t]he *tax credit is also preferable in terms of incurring the lowest level of compliance costs*. Notwithstanding this evidence, the New Zealand Government and officials prefer a grants scheme, the opposite of what the research indicates is preferred by businesses."

Robinson's research[19] was timely in that it provided insights from interviews with tax practitioners who had experience with NZ's first tax credit scheme for R & D, which regrettably only lasted for one year (the victim of politics). Robinson examines the R & D tax credit from the perspective of a behaviour changing intervention. He concludes:[20]

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15 Sawyer, above n 9.
16 OECD, *Fiscal Measures to Promote R&D and Innovation* (1996) 25-26.
17 Sawyer, above n 9, at 143 (emphasis added).
18 Ibid, at 148 (emphasis added).
19 Robinson, above n 10.
20 Ibid, at 5-6 (emphasis added).

> "The overall finding for this paper is that the *success or failure of behaviour changing efforts cannot be assessed within a single business year*. Although there was little indication that the R&D tax credit had influenced new R&D from its introduction, the interviewees all stressed the fact that there *had not been enough time for business managers to see the financial benefits derived from this credit and to further have the funds to engage in new projects*."

Robinson traverses the process by which the R & D tax credit concept was developed and eventually became law. The process commenced in 2006 with a discussion document and an issues paper being released.[21] Draft legislation was introduced in 2007, becoming law with effect from the 2008-9 income year. The tax credit was subsequently repealed with the change in government following the 2008 general election. Robinson reports on several of the interviewees comments:[22]

> "When asked about grant funding as another mechanic for creating R&D, responses were fairly sceptical. Grants were typically seen as a minimum level of government investment, or as an inferior substitute:
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> > "Grants seem quite difficult to get… it seems more hit and miss… with R&D if you're undertaking R&D and it fits the statutory definition you should be eligible and so you receive an amount. But I guess with grants you have to be accepted."
>
> A public accountant
>
> > "Grants are handouts and will always be limited in availability, whereas a tax credit places the incentive and control on the researcher who must initially fund it themselves. Nothing focuses the drive for success more than having one's own money at risk. Hence a tax credit is a far stronger mechanism for driving innovation than grants."
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> A public accountant

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21 Michael Cullen and Peter Dunne, *Business Tax Review: A discussion document*, (2006, Wellington, NZ: Policy Advice Division of the Inland Revenue Department); and Policy Advice Division of the Inland Revenue Department. & New Zealand Treasury, *R&D tax credits – an officials' issues paper on matters arising from the Business Tax Review* (2006, Wellington, NZ: Policy Advice Division of the Inland Revenue Department).

22 Robinson, above n 10, at 37-38.

> "As far as companies are concerned, if they can get a contribution for the research they're doing, great. And from that perspective if it's a grant or credit it shouldn't really matter. But it's really a question of what's the allocation method of public funds and I'm not sure that you get the best outcome with [grants] – because then you effectively have got people that know how to get the grants will get the grants and people that don't know won't get them."
>
> A public accountant"

A further major finding of Robinson's study is that the success of the R & D tax credit could not be effectively evaluated as it required much longer than one year of operation to evaluate. Thus this qualitative-based approach to the research was the only feasible method with the absence of longitudinal quantitative data.

A recent review of NZ's R & D tax incentives and grants was undertaken by Afram in 2016.[23] Afram applies Adam Smiths' principles or cannons of taxation (equity, certainty, convenience and economy),[24] as a criteria to evaluate the one year R & D tax credit, the more recent cashing out of losses, and the Callaghan Innovation administered grants. Her analysis ranks the tax credits and cashing out of tax losses from R & D activities as superior to the grants approach.

A common theme throughout these studies is the significant role that political interventions have had in shaping R & D incentive policy, including a number of undesirable side effects, such as creating uncertainty and wastage of resources. The next section of the paper reviews these political interventions and their impact.

3. Fiscal support for R & D – a hostage to politics?

3.1 R & D tax incentives - a political football?

As has been indicated in the previous section, government policy with respect to R & D incentives has changed dramatically on numerous occasions over the last twenty years or so.

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23 Dina Afram, "A Review of New Zealand's Past& Current R&D Incentives and How They Reflect Adam Smith's (1776) Principles of Good Taxation: An Exploratory Study", *A Thesis Submitted to University of Canterbury of Christchurch in Fulfilment of the Requirements for the Master of Commerce with Honours Degree in Taxation* at the University of Canterbury, Christchurch NZ (2016).

24 See Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, in Cannan, E. (ed), London: Methuen (1950 edition).

This has created a great deal of uncertainty for businesses, and has done little to advance NZ up the OECD table in terms of its investment in R & D activities.

As discussed earlier, until the latter part of the 2000s, NZ's principal approach was to allow for full deductibility of R & D expenditure that met criteria specified in tax legislation and in financial accounting standards. As areas of black hole expenditure were identified, legislative clarifications were made in most instances to ensure the expenditure was deducible for tax purposes. Rather than provide direct support through the tax system as recommended by private sector organisations, researchers and businesses themselves, the NZ Government persevered with a grants-based system (through Callaghan Innovation – see the discussion in the next subsection), deciding that it (and officials) were best placed to 'pick winners'. The research has showed that this approach has been insufficient to boost investment in R & D activities.

The first significant change was the introduction of the 15 percent tax credit with effect from the 2008-9 income year by the then Labour-led Government. This credit was aimed to incentivise NZ businesses to invest in R & D in order to correct an under-investment trend, stimulate the economy, improve productivity and raise international competitiveness. It also was seen as an opportunity to bring NZ into line with countries who already offered tax incentives for R&D – especially Australia's 125 percent accelerated deduction. The legislation, set out in subpart LH of the Income Tax Act 2007 (ITA 2007), effectively provided NZ businesses with a 15 percent tax credit on eligible expenditure. As Robinson indicates, this scheme was largely supported by advisers to businesses that invest in R & D activities.[25]

The change of government in November 2008 resulted in the R&D credit being repealed from the 2009-10 income year onwards. The reasoning given by the National-led Government (which would usually be seen as pro-business), was to fund its preferred tax regimes involving personal income tax cuts. The National-led Government claimed that it was appropriate to cease the R & D tax credit as it was unclear whether new R & D would be developed. If so, then the credit was simply rewarding R & D that would have been conducted irrespective of the credit. Important questions needed to be answered, such as 'Had businesses been responding to the credit by engaging in new R & D, or did they, perhaps, simply reclassify other expenditure that could qualify for the credit'? Whatever was the case, the abolishing of

[25] See Robinson, above n 10.

the credit means these propositions could never be effectively tested. Furthermore, a one year period is too short to evaluate the effectiveness of the tax credit or otherwise. In effect, the National-led Government had answered its questions without allowing time to determine whether they were correct.

Nothing further happened of significance until 2015 when the National-led Government became convinced that the current grants-based scheme was not supporting new businesses. This was not a surprise to those that understand the importance of fiscal stimulus to encourage investment in R & D activities.

Legislation was enacted to allow start-up companies engaging in intensive R & D development activities to "cash out" their tax losses for R & D expenditure. The Taxation (Annual Rates for 2015–16, Research and Development, and Remedial Matters) Bill was enacted on 24 February 2016 with effect from the 2015-16 income year. Under the scheme, R & D start-up companies would be able to receive a payment for up to 28 percent (the company tax rate) of their tax losses from R & D expenditure in any given year. To be eligible, the company must be a loss-making company resident in NZ, with a sufficient proportion of labour expenditure on R & D. Research and development expenditure eligible for the measure was more restricted than the R & D expenditure that is deductible under sections DB 34 and DB 35 of ITA 2007. The amount of losses that could be cashed out were initially capped at $500,000 for the 2015–16 year, increasing by $300,000 over the next five years, to $2 million.

In a Special Report on the legislation issued by IR, the following comment is made:[26]

> "*A cashed-out loss can be thought of as an interest-free loan from the Government to be repaid from the taxpayer's future income; it is intended to provide a cash flow timing benefit only*. In economic terms, repayment of cashed out losses will occur when a taxpayer pays tax on net income that would otherwise have been sheltered by the cashed out losses. An earlier repayment will also be triggered in certain circumstances. Triggers for the early repayment of amounts cashed out include the sale of research and development assets, liquidation or migration of the company, and the sale of the company. *The early repayment will be effected via a new R&D repayment tax*. Where

[26] Inland Revenue, *"Cash out" of research and development tax losses, a Special Report*, Policy and Strategy (April 2016), at 2 (emphasis added).

a cashed out loss is required to be repaid early, a new deduction will reinstate the loss, which will be available to offset future income."

Thus this cashing out of losses is effectively a repayable loan once the company becomes profitable and pays tax (similar in some respects to student loans for tertiary study). With its very limited application, this measure would be welcomed by some businesses but not relevant to most involved in R & D activities.

With a change in government following the 2017 general election, the new Labour-led Government was quick to reintroduce a tax credit, based initially on its earlier 2008-9 regime, but with some differences that emerged through the consultation process. The new Government announced that its goal was to increase total R & D as a percentage of GDP to 2 percent (from the then 1.25 percent). In order to reach this target a significant amount of growth is expected to come from NZ business expenditure on R & D. The R&D tax incentive (effectively a tax credit) was the primary mechanism for achieving this. In the Impact Statement accompanying the proposal, the Labour-led Government observed:[27]

> "New Zealand currently delivers R&D subsidies to businesses through Callaghan Innovation. The bulk of these subsidies are delivered through Growth Grants to firms that have stable, high-intensity R&D programmes. However, *these grants are unavailable to the large majority of firms that are currently undertaking R&D or may undertake R&D in the future.* While these remaining firms can obtain Project Grants, these are targeted at a specific type of R&D expenditure and involve significant compliance/transaction costs (i.e., expenditure of time and resources) for firms."

The new tax credit was expected to initially cost the government $NZ1.02 billion for each of the first four years, over and above the $NZ0.53 billion on grants paid through Callaghan Innovation. Growth Grants (the current funding mechanism via Callaghan Innovation) for business R&D would be phased out with the introduction of the R&D tax credit. The Taxation (Research and Development Tax Credits) Act 2019 amended the ITA 2007, along with other

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[27] See Megan Woods, Stuart Nash, (*Coversheet: Research & Development Tax Incentive: Impact Statement* 2017), at 2 (emphasis added). This statement was supported by personnel from MBIE, The Treasury and IR. Inland Revenue subsequently issued a series of briefing papers; see IR, *Research and Development Tax Credit: Policy reports and briefing notes* (September 2018). See also, IR, *Research and development tax incentive: Guidance* (May 2019), which provides in-depth guidance and a series of useful flowcharts that explain the core aspects of the new tax credit incentive.

statutes, with specific provisions for the 2020 income year and new provisions for the 2021 and subsequent years.

As part of a transition, in order to reduce the risk of uncertainty and reduction in business expenditure on R & D, the NZ Government would:

- Educate and develop appropriate guidelines so businesses understand how to claim the R&D tax credit;
- Allow a transition period of 2 years during which existing Growth Grant recipients may continue to claim a Growth Grant through Callaghan Innovation (instead of the tax credit);[28]
- Provide clear information on transition arrangements for Growth Grant recipients to ensure a smooth transition to the Tax Incentive that supports businesses to maintain and grow their R&D over time; and
- Develop an appropriate implementation strategy to ensure the successful uptake of the R&D tax credit.

The other risk of the R&D Tax Incentive is recharacterisation of business-as-usual expenditure. This risk would be managed by:

- A robust definition of eligible R&D in tax (and other relevant) legislation to create a clear boundary between R&D and non-R&D; and
- Audit of claims, including in-year approval of the R&D.

Other types of grants provided by Callaghan Innovation will remain, leaving a mix of tax credits, cashing out of losses and grants approach to stimulate investment in R & D activities. While initially proposed to be 12.5 percent, submissions received during the consultation process encouraged to the NZ Government to accept the tax credit rate should be 15 percent, which is a welcome outcome showing the importance of engaging in the consultation process.

In order to claim the credit the business must first determine if it is an eligible person (as defined in the legislation), will the activities be considered to be an eligible R & D activity (as defined

[28] See further material provided by Callaghan Innovation, *Managing the Transition from Growth Grants to the R & D Tax Incentive* (2019).

in the legislation), is the expenditure eligible for the credit, as well as taking into account practical considerations, such as registration with IR, and providing a supplemental R & D return following filing of their tax return. The process for year one of the regime (which ends 31 March 2020 for most taxpayers) is transitional, with a change in process for the subsequent years (assuming the scheme remains if there is a change in government following the 2020 general election). In essence IR is the gatekeeper for approving expenditure that leads to the granting of the R & D tax credit.

The enactment of the Taxation (Research and Development Tax Credits) Act 2019 is not the latest development in this area. The Taxation (KiwiSaver, Student Loans and Remedial Matters) Bill 2019 (the Bill), currently before the Finance and Expenditure Select Committee (FEC), proposes further changes to the new tax credit. In the Commentary on the Bill, it states that:[29]

> "The Bill proposes an amendment to make refundable R & D tax credits available to more firms. It is proposed that the existing corporate eligibility criteria, wage intensity test, and $255,000 cap be removed and replaced with a payroll-tax based cap. It is also proposed that entities that derive tax exempt income (other than levy bodies, and claimants that only receive exempt income from certain intercompany and foreign dividends) be ineligible for the R & D tax credit. …
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> The Bill also proposes an amendment to allow the Commissioner to adjust a person's R & D tax credit claim upwards if the person has initiated the disputes process through issuing a notice of proposed adjustment (NOPA) within four months of filing their income tax return or a year after their income tax return due date."

Furthermore, there is a proposed amendment to prevent a person from challenging the Commissioner of Inland Revenue's decisions made for the pilot approval scheme and expenditure exceeding the $120 million cap. Other changes proposed relate to R & D Certifiers, and adjustments for joint ventures involved in R & D investment activities.

This is not the complete story as to the political nature of R & D support – the grants schemes need to be reviewed. This is the subject of the next subsection.

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[29] Stuart Hash, *Taxation (KiwiSaver, Student Loans, and Remedial Matters) Bill: Commentary on the Bill* (June 2019), at 27 and 36. For further discussion, see Virginia Ginnane, "R&D Tax Incentive: Refundable Tax Credits extended to more businesses" (2019) *Taxation Today* (September) 4-5.

3.2 Callaghan Innovation – a focus on 'picking winners' via grants[30]

Callaghan Innovation was established following a June 2012 NZ Cabinet decision to set up an advanced technology institute (ATI) with the main objective to support science and technology-based innovation and its commercialisation by businesses, primarily in the manufacturing and services sectors, to improve their growth and competitiveness. As an ATI, Callaghan Innovation initially employed 320 scientists from Industrial Research Limited (IRL), a Crown Research Institute (CRI) that was disestablished as Callaghan Innovation was established. Callaghan Innovation also administers the Ministry of Business, Innovation and Employment's (MBIE's) co-funded portfolio.

Legislation was enacted establishing the organisation as a new statutory Crown entity in December 2012.[31] The new organisation, with the permanent name of Callaghan Innovation, commenced operations from 1 February 2013 and is located in the Auckland, Wellington (including the Hutt Valley) and Canterbury regions.[32]

Callaghan Innovation offers four types of grants to NZ businesses: student grants, getting started grants, project grants and growth grants. Student Grants are available for NZ-based businesses that want to:

- Access NZ undergraduate and postgraduate students who can assist them in their R&D projects;
- Gain access to the latest thinking and fresh talent at a minimal cost;
- Train and mentor a future employee for them or the sector; and
- Build links with New Zealand universities

The types of Student Grants are as follows:

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30 Most of the details are taken from information on the Callaghan Innovation website: https://www.callaghaninnovation.govt.nz.

31 See Callaghan Innovation Act 2012.

32 See further: https://www.callaghaninnovation.govt.nz/about-us/publications-and-documents. In its April/May 2016 newsletter, NZIFST Careers reports on the success of two tertiary students working under a student grant over the summer of 2015-16; see "Undergraduates gain experience through Callaghan Innovation R&D Experience Grants", Food New Zealand, (April/May 2016), at 40-41.

- **R&D Experience Grant**: A 10-week internship designed as work experience during the student's summer break or at completion of the student's study. The student is expected to help the business with an R&D project. The grant is available part of the year.

- **R&D Fellowship Grant**: Designed to provide funding support for students to undertake a PhD, or the research component of a master's degree, which is aimed at solving a technical or scientific problem for the business. The business will get access to the latest thinking and knowledge through the student's university supervisor and build ongoing links between the business and the university. The grant is available year-round.

- **R&D Career Grant**: An internship designed to bridge the first six months of employment – providing work experience for recent PhD or masters graduate students. The student is expected to help the business with an R&D project. The grant is available year-round.

Getting Started Grants are available for NZ-based businesses that want to:

- Launch their R&D activities to create a competitive edge;

- Navigate through R&D roadblocks – whether its troubleshooting, basic prototyping, project planning, technical feasibility studies, development of an Intellectual Property strategy or determining product specifications and user requirements; and

- Access technical expertise to support businesses in taking the business's development in the right direction.

A business that is successful with this type of grant will:

- Receive 40 percent of their eligible R&D project costs, up to $5,000 (based on a quotation);

- Only receive funding for R&D done in NZ; and

- Receive a one-off payment on completion of the project.

For Project Grants, in addition to strict application criteria, these grants are designed to help businesses:

- Build their R&D expertise by giving the business an opportunity to push the boundaries and uncover new scientific or technical knowledge and understanding;
- Break new ground in an R&D project for the development of new or substantially improved devices, products, processes, systems or services;
- Develop the business into a stable and substantial R&D performer; or
- Grow their investment in R&D.

The business will:

- Typically receive 40 percent of their eligible R&D project costs, reducing for large projects, or when the business has had multiple grants;
- Only receive funding for R&D done in New Zealand (unless pre-approved); and
- Receive payment in arrears (monthly or quarterly).

For Growth Grants (which are being phased out with the new R & D tax credit),[33] their objective is to increase NZ businesses' investment in R&D to support long term economic growth. These grants are a rules-based, market led incentive for increasing R&D investment in businesses that are experienced in investing in R&D. To have eligible R&D expenditure a business must have:

- Incurred expenditure on an eligible R&D activity; and
- Expenditure must not be in the list of general or specific inclusions.

The guidelines are based on the Ministerial Direction but include additional clarification. Businesses are encouraged to discuss any matters with Callaghan Innovation directly.

[33] Callaghan Innovation provides guidance as to how the transitional process works; see Callaghan Innovation, *R&D Tax Incentive* (September 2019); available at ww.cahhalganinnovation.govt.nz/grants/rd-tax-incentive.

In 2014, Callaghan Innovation was a recipient of "the Accomplice Award", after it was discovered it had been providing grants for R & D to transnational companies, many of which were operating from tax havens.[34] This is an excellent example of the challenges in allowing an institution to determine grant recipients when the process lacks full robustness checks.

In an evaluation of Callaghan Innovation reported in 2015,[35] a significant problem perceived by interviewees was the focus of R & D funding on product innovation followed by a lack of funding to support later stage commercialisation of products. This later stage of product and market development is excluded from Callaghan Innovation co-funding. As a consequence, this leads to 'prototypes-on-a-shelf'. Applicants also found the process time consuming, due to the complexity of the application questions, as well as delays in response from the funding network of regional funding partners and the Government Ministry. Concerns over the use and role of consultants were also expressed by applicants. The study was carried out during the establishment period of Callaghan Innovation.

What can be said going forward? The next subsection attempts to provide some 'crystal ball' insights.

3.3 The immediate future?

As at the time of writing this reflects the state of play with respect to the political football of R & D incentives, focusing on government utilisation (or otherwise) of the tax system. The current scheme is still in its first transitional year of operation. From April 2020 the full regime comes into play, with the role of Callaghan Innovation reducing as the Growth Grants it administers are fully phased out by the end of the 2021 year.

What is clear is that businesses cannot expect certainty through continuance of a particular R & D incentive scheme. As a consequence, NZ's R & D performance is being hampered and it will be some time, if ever, that the current government's goal of 2 percent of GDP being invested into R & D activities eventuates. Much irreplaceable experience, and sizable compliance and administrative costs were incurred for the one year 2008-9 tax credit scheme. The current scheme cannot be permitted to suffer a similar fate; however, only time will tell.

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34 See *The Roger Award 2014* (2015).

35 Nick Kearns and William Beale, "Show me the Money: Perspectives on Applying for Government Research and Development Co-funding" (2015) *Occasional & Discussion Paper Series No 2* (Unitec).

While it is not possible to predict the outcome of the next election, many pollsters are forecasting that a Labour-led Government will be returned, notwithstanding that the National Party has the most support of any party in polling. Should this eventuate, then the risk of significant change to the R & D tax credit regime is low, assuming NZ's economy does not go into recession. With a change to a National-led Government, based on past form, the risk of intervention cannot be ruled out. In order to give NZ businesses a chance to increase their investment in R & D, and to evaluate the success of the regime, tinkering should be avoided other than to make remedial changes to support the intention of the R & D tax credit. Political party manifestos could make for interesting reading later in 2020.

4. Concluding observations

This paper has sought to traverse around twenty years of government-based support, or otherwise, for encouraging R & D investment in NZ. It notes that following a very timid approach in the early 2000s of clarifying what expenditure is deductible for tax purposes (including reducing black hole expenditure), efforts were made to introduce targeted grants. Here officials through a government agency would be charged with 'picking winners' through allocating various types of grants.

Following work undertaken for the Royal Society of NZ, subsequently published by Sawyer in 2005,[36] along with other researchers, the pressure to improve NZ's low ranking in the OECD for R & D investment as a percentage of GDP increased to the point that government action was taken. This led to the Labour-led Government's ill-fated one year tax credit for the 2008-9 year that was repealed by the incoming National-led Government. We will never be able to assess whether this scheme would have increased R & D investment significantly. This was a lost opportunity, as Robinson observed.[37] Grants remained the main source, along with provision for enabling new firms with tax losses due to R & D investment to cash out those losses by way of a government loan, repayable when they became profitable and paid income tax. Neither the grants nor the cashing out of losses were options for supporting most R & D business, so further support was needed.

With the incoming Labour-led Government in 2017, the second tax credit scheme was developed, with application from the 2019-20 income year. Similar to its predecessor, this

[36] Sawyer, above n 9.
[37] Robinson, above n 10.

scheme will support a broad range of businesses and is the main mechanism to meet the current government's goal of R & D expenditure being 2 percent of GDP. Phasing out of the Growth Grants, administered by Callaghan Innovation, is occurring, placing greater emphasis on tax credits to stimulate R & D investment. It is too early at this stage to evaluate the effectiveness of this new tax credit incentive. One possible challenge to its continued existence will be the outcome of the 2020 general election should there be a change to a National-led Government.

The research question this paper sought to answer is: *What can we learn from NZ's political intervention experience to encourage investment in R & D activities?* As noted above, this necessitated an in-depth exploratory case study analysis of the support provided by government to R & D investment in NZ.

What this analysis reveals is that R & D incentives have been highly political, and 'kicked around' by various governments as they prioritise their tax policies and approach to encouraging R &D investment. One major takeaway is that the matter of R & D incentives is too important to leave to the whim of politicians. Such incentives are vital to the success of New Zealand Inc., and in this regard any change should require political consensus based upon independent analysis and input from officials, economists and tax experts. Perhaps a minimum period of operation is necessary before any significant change is made so as to allow sufficient time for review and analysis. A major challenge would be to get cross party support for the legislation. This paper's analysis suggests that the political efforts to date have done little to support economic growth through enhanced investment in R & D activities. In many respects they have served to hinder, especially so for smaller businesses. The biggest concern is a lack of stability and certainty for businesses.

This paper has a number of limitations. The first is that the latest regime is only starting and it is too early to evaluate its effectiveness. Furthermore, if there should be a change in government at next election then what might occur? Second, this paper takes an outsider's perspective; the author is not part of political decision-making process nor an official that has access to confidential information and data.

In terms of future research, an evaluation of the latest scheme in two to three years would enable a preliminary comment on its effectiveness in moving NZ closer to the current government's goal of 2 percent R & D as a percentage of GDP. The outcome of the next

general election will also be known by this time. More specifically, analysis of whether NZ has the right mix of support (grants, cashing out of losses and a tax credit) can be undertaken.